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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,162	12/29/2000	Keuk-Sang Kwon	3430-0164P	6546

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EXAMINER	
LESPERANCE, JEAN E	

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/750,162	KWON ET AL.	
	Examiner	Art Unit	
	Jean E Lesperance	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12 and 13* is/are allowed.

6)☒ Claim(s) *1-5,7-11,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12-29-2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The request for continuation examination filed on 4/7/2005 is entered and claims 1-5 and 7-15 are now pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 7-11, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art (AAPA) in view of Oh et al (5,856,818). Oh et al (US 5,856,818) was cited in previous action.

As per claim 1, Applicant disclose in the AAPA a quad type liquid crystal display

device RGGB comprising a liquid crystal panel having gate and data lines which define sub-pixel regions, gate driving integrated circuits seen either on the left and the right side of the circuit, a plurality of data drive circuits 1 15c, 1 15d arranged on one side of the liquid crystal panel and in this case on the upper portion of the panel, each of the data drive integrated circuits having $$m" (m is natural number) number of channels as claimed (see AAPA, figure 5). Oh et al is cited to show that using more than three data drive ICs (1 , 2 , 3 , 4 , ...) in a single bank structure for a liquid crystal display device is well known in the art as seen in figure 11. Neither the AAPA nor Oh et al discloses the (3n-1) channels for each data drive but it would have been obvious to one of ordinary skill in the art to spread out the floating channels or the non-use channels over the entire drive IC because it would provide a good balance in preventing the waste of liquid crystal inserted between the substrates.

As per claim 2, Applicant discloses in the MPA a device wherein each of two sub-pixels correspond to red, a first green, a second green, and a blue color filters as claimed (see figure 5).

As per claim 3, the device disclosed in the MPA is a device wherein m is 384 as claimed (see page 5, lines 1-2 of AAPA, figure 5).

As per claim 4, Applicant discloses in the AAPA only three data integrated circuits (see figure 5) but Oh et al is cited to teach a liquid crystal display having driving integrated circuits in a single bank and including first to nth D-ICs spatially arranged in the upper region of the liquid crystal panel (fig. 1 1). It would have been obvious to one of ordinary skill in the art to utilize four data

drive integrated circuits (D-ICs) as taught by Oh et al into the AAPA for the same reasons stated in claim 1.

As per claim 5, Applicant discloses in the AAPA a liquid crystal display panel having a plurality of drive integrated circuits for driving the panel, each having "m" (natural number) number of channels and "n" (n<m, natural number) number of floating channels see figure 5), a plurality of film for connecting the drive integrated circuits. Applicant does not disclose in the AAPA that each film having (m-n) number of lines. Oh et al is cited to show that using more than three data drive ICs (1, 2, 3, 4,.) in a single bank structure for a liquid crystal display device is well known in the ad as seen in figure 11. Neither the AAPA nor Oh et al discloses the (m-n) channels for each data drive but it would have been obvious to one of ordinary skill in the art to spread out the floating channels or the non-use channels over the entire drive IC because it would provide a good balance in preventing the waste of liquid crystal inserted between the substrates.

As per claim 7, the device disclosed in the AAPA is a device wherein m is 384 as claimed (see page 5, lines 1-2 of AAPA, figure 5).

As per claim 8, Applicant discloses in the AAPA only three data integrated circuits (see figure 5) but Oh et al is cited to teach a liquid crystal display having driving integrated circuits in a single bank and including first to nth D-ICs spatially arranged in the upper region of the liquid crystal panel (fig. 11). It would have been obvious to one of ordinary skill in the art to utilize four data drive

integrated circuits (D-ICs) as taught by Oh et al into the AAPA for the same reasons stated in claim 1.

As per claim 9, Applicant discloses in the MPA a device wherein each of two sub-pixels correspond to red, a first green, a second green, and a blue color filters as claimed (see figure 5).

As per claim 10, the AAPA discloses an IC wherein there are at least three data drive integrated circuits which also would include four as claimed.

As per claim 11, Applicant discloses in the AAPA only three data integrated circuits (see figure 5) but Oh et al is cited to teach a liquid crystal display having driving integrated circuits in a single bank and including first to nth D-ICs spatially arranged in the upper region of the liquid crystal panel (fig. 11).

As per claim 14, the AAPA discloses an IC wherein there are at least three data drive integrated circuits which also would include four as claimed.

As per claim 15, the AAPA discloses an IC wherein there are at least three data drive integrated circuits which also would include four as claimed.

Allowable Subject Matter

4. Claims 12 and 13 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: the claimed invention is directed to a squad type liquid crystal display device. Independent claims 12 and 13 identify a uniquely distinct feature "wherein a first group of four sub-pixels for a first pixel have one of positive and negative polarity, and a next

group of four sub-pixels for a next pixel have the other of positive and negative polarity, and remaining croups of four sub-pixels for remaining pixels alternate between positive and negative polarity"

Response to arguments

6. Applicant's arguments filed April 7,2005 have been fully considered but they are not persuasive. Applicant argued that 'the definition of the floating channels does not merely spread out the floating channels along the entirety of the m channel available". Examiner disagrees with the applicant view because it is obvious that the channels could be included in the spread out taught by Oh et al. in a specific order. Also another way to look at is that the spaces between the pins are floating without being connected to anything (a broad way to read it). Applicant argued that the rational is insufficient to modify the AAPA to arrive at the claimed invention. Contrary to applicant's arguments, one skilled in the art would be very motivated in combining the Oh et al reference with the MPA to reasonably arrive at the claimed invention. Furthermore, applicant argues that he examiner has not provided any suggestion in the art to spread out" the channels as stated. The examiner recognizes that obviousness can be established by combining or modifying the teachings of the prior ad to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See in re Fine, 837 F.2d 1071, 5 USPQZd 1596 (Fed. Cir. 1988) and in re Jones, 958 F.2d 347, 21 USPQZd 1941 (fed. Cir. 1992).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:OOAM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard, can be reached on (571) 272-7603.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Art unit 2674

Date 5/25/2005

HENRY N. TRAN
PRIMARY EXAMINER